

WAR AND THE BALANCE OF THE SEXES.

THAT it is desirable to maintain as far as possible a balance of the sexes is a principle on which eugenists are generally agreed. The extent to which the present war is disturbing that balance has hardly been fully appreciated, and in this article I propose to set forth the facts concerning the principal belligerent countries in so far as they have been ascertainable. In all the European countries involved—Great Britain, Ireland, Belgium, France, Italy, Germany, Austria, and Hungary—there was at the outbreak of war a greater or less preponderance of females in the population. At the end of 1910, or early in 1911 (when the last census was taken in these countries), the various excesses in amount and in ratio were as follows:—

				Excess of Females.	
				Numbers.	Females per 1,000 males.
England and Wales	...	...	...	1,179,000	1067·6
Scotland	...	...	...	143,000	1062·0
Italy	...	...	...	628,000	1036·9
Austria	...	...	...	506,000	1036·1
France	...	...	...	683,000	1035·4
Germany	...	...	...	845,000	1026·4
Hungary	...	...	...	196,000	1018·9
Belgium	...	...	...	62,000	1016·9
Ireland	...	...	...	6,000	1002·8

The excess was, as will be seen, very considerably greater in Great Britain than elsewhere, while in Ireland, Belgium, and Hungary it was sufficiently slight to be ignored. During the generation immediately preceding, *i.e.*, since the census of 1880-1, there was considerable diversity in these countries as to the movement of the sex balance. In England and Wales, Belgium, France, and Italy, the proportion of males was falling with greater or less rapidity; in Germany, Austria, Hungary, and Scotland, on the other hand, it was rising. In England and Wales the excess of females had risen by 23%, in Belgium (where in 1880 the sexes were nearly equal) by 1500%, in France by 750%, while in Italy there was in 1880 an excess of males. The decline in Scotland was 18%, in Germany 33%, in Austria 23%, and in Hungary 40%. Had these tendencies continued without interruption for another generation the sexes would, in the Central Empires, have attained something near to an equal distribution, while on the other hand, each of the allied countries would have been faced by an emphasising of what has been most ungallantly termed "the problem of the superfluous spinster."

The excess of females is not, however, spread equally over the entire population. If those under the age of 20 are excluded we find some very different and striking figures. Thus in 1910-11, in Germany, Belgium, France, Scotland, Ireland, and Italy, there was an excess of males at

ages under 20, while in Hungary, Austria, and England the excess of females was very small. At ages over 20 the proportion of females to males was:—Scotland, 1,200; England, 1,130; Italy, 1,078; Austria, 1,062; France, 1,060; Germany, 1,054; Hungary, 1,035; Belgium, 1,033; Ireland, 1,024. Here again the position of Great Britain is very much worse than that of any of the others.

Finally, if we exclude all those under 20 and over 60, including only the mass of those who form the economic and reproductive elements of these countries, we find that in 1910-11

Ireland	had	995	females	to	1,000	males	aged	21-60.
Belgium	"	1,001	"	"	"	"	"	"
France	"	1,026	"	"	"	"	"	"
Germany	"	1,026	"	"	"	"	"	"
Hungary	"	1,035	"	"	"	"	"	"
Austria	"	1,047	"	"	"	"	"	"
Italy	"	1,085	"	"	"	"	"	"
Scotland	"	1,088	"	"	"	"	"	"
England & Wales	"	1,093	"	"	"	"	"	"

In this, presumably the most important section of the population, Great Britain again occupies the least desirable position, with Italy this time in close attendance. The numbers forming the excess in this class were:—Ireland, 5,000; Belgium, 15,000; France, 27,000; Germany, 400,000; Hungary, 167,000; Austria, 316,000; Italy, 660,000; Scotland, 100,000; England and Wales, 838,000.

It is in this section that the war has produced and is producing the disturbance of the sex balance. The men who have fallen practically all come within these age limits; they were all potential or actual progenitors. In attempting to calculate the effect produced on some of the belligerents it may be said that, without in any way pretending to exactitude, the figures given have been based on reliable sources, and that they represent, with approximate accuracy, the position at the end of 1917. Owing to the lack of reliable sources of information, I make no attempt to calculate the excess of females at these ages for Belgium, France, or Italy. For Great Britain the ratio of females to males in this age-class had increased to 1,150; for Germany, Austria, and Hungary it was about 1,200. It is probable that, bad as is the position in this respect in Great Britain, it is better than in the Central Empires, and the relative positions have been reversed. It is, of course, impossible to forecast what the ratios will be at the end of the war. Every day sees the shrinkage of the male element in the populations of the belligerent countries, and the problem that will have to be faced by each one of them in this respect will apparently defy solution. Moreover, it is quite within the bounds of possibility that emigration, stayed by the war, will be resumed with increased vigour at its conclusion.

It was pointed out earlier in this article that before the war the excess was already a rising quantity in this country, in Italy, in Belgium, and in France. The causes that affect the sex distribution of a country are

three—the sex ratio at birth, the sex ratio at death, and migration. Great Britain, and more particularly England and Wales, has a smaller excess of males at birth than any other European country. It has also a higher ratio of male to female mortality than any of the countries named. In regard to the former there has been a marked increase in the excess of male births among “war babies” in this country. During the ten quarters up to the end of 1917, in which all births registered were those of “war babies,” the ratio was 1,045 boys to 1,000 girls. During the 40 years preceding the war in which birth registration was enforced under penalty in this country the ratio was 1,038. It stood at 1,043 in 1875, and was as low as 1,032 in 1898, so that there have been considerable fluctuations, but for a continuous period of 2½ years the highest ratio recorded in that period was 1,041. Moreover, during the 40 years the ratio has never remained above the mean (1,038) for more than four successive quarters, whereas during the period from June, 1915, it has remained consistently above that average, never falling below 1,043. I do not propose to enter into the highly interesting question as to what may have been the causes of this increased ratio; for the immediate purposes of this article it is sufficient to point out the incontrovertible fact that there has been a marked rise in the proportion of male births during the war, and that this rise has been maintained to a greater or less extent throughout. As the Registrar-General remarked in his presidential address to the Royal Statistical Society on November 20th, 1917:—“A rise in the sex proportion so marked and sustained over so long a period can hardly be dismissed as an accidental circumstance.”

It will be seen, then, that even in this country there is a considerable preponderance of males at the start of life and that the turning of the balance in the other direction is due to an earlier loss of the male than of the female population. As already stated, the ratio of male to female mortality is higher in this than in any other of the belligerent countries, but in spite of that fact the excess of male deaths, in volume, does not exceed the excess of male births. During the 30 years between the census of 1881 and that of 1911 the excess of females in the population rose by nearly half a million. In the same period the excess of male over female births was also nearly half a million, while the excess of male over female deaths was only 470,000. It is true that as there were more females than males in the population there were more possibilities of female deaths, and, had the numbers of the males been equal to the numbers of females and the deaths been in the same proportion, the increase of females over males in the population during the 30 years in question would have been nearly equal to what actually was the case. This, however, does not represent the facts of the case. The males withdrawn from the population by migration are not spread equally over the whole of the age-classes. They come mainly from the more virile and vigorous age-classes, with few from the extremes of infancy or of old-age, at both of which periods the ratio of mortality of males to females is in excess of the mean for the whole of life. Thus in the first year of life the ratio of male to female deaths is nearly double what it is for all ages, and the

numbers of migrants of that age must be very small indeed. Allowing for these facts, it may be assumed that, with a number of males equal to the actual number of females, the addition of males being made to the age-classes other than those of infancy and old-age, there would have been an increase of the excess of females in the 30 years 1881-1910 of about a quarter of a million. The point that emerges from these estimates is that, although as a matter of fact the increase in the excess of females between 1881-1910 was actually due to migration, there would have been an increase—smaller, it is true—had migration been entirely suspended. In other words, the sex balance in this country is being turned against the males by natural causes, the more persistent vitality of the female being more potent than the plurality of males at birth.

Thus in England and Wales in 1915 the excess of deaths of males in the civilian population was all but equal to the excess of males born in that year, although the civil male population, as estimated, was in the proportion of 1,000 males to 1,210 females. In 1916 there was an excess of male births of nearly 19,000, while the excess of male deaths in a civilian population in which there were estimated to be 1,000 males to 1,300 females, was over 10,000. Last year, when in the estimated civil population there were 1,400 females to 1,000 males, the excess of male deaths in that population practically wiped out the 15,000 excess of male births.

For the immediate problem that will confront this country in regard to the disproportionate numbers of females of fertile age I can see no satisfactory solution. The Dean of St. Paul's has suggested that "systematic plans of colonisation should be worked out and young women should be sent out in sufficient numbers to keep the sexes equal." How far would this meet the situation? By the end of the war the small excess of males in New Zealand will probably have disappeared altogether. In the Commonwealth of Australia there was in 1914 an excess of 64,000 males at ages between 21 and 45. Of these some thousands have already married in this country, and the toll of battle will seriously cut down the numbers to return. There remains only Canada as to which I have no recent reliable statistics. At the census of 1911 there was no appreciable surplus of males in the provinces of New Brunswick, Nova Scotia, Ontario, Prince Edward Island, or Quebec, while in British Columbia, Manitoba, and the North-West, there was an excess of about 400,000 males. Canada, therefore, could profitably absorb about one-half of the additional excess caused in this country by the war alone, leaving five-sixths of the total excess untouched.

As for the future the only remedy seems to lie in the greater preservation of male lives. How far this can be effected it is impossible to say. There is, as has already been remarked, a great disparity in the sex mortality of this as compared with other countries, and the after-effects of the war are likely to emphasise the excess of male deaths among those who have taken part in the struggle. But something might be effected with the coming generations. Before the war the only period of life in this country at which the rate of mortality was about equal

was at the ages between 5 and 15, when it was actually slightly lower for males. In Scotland it was about equal between the ages of 5 and 35. In Italy from the age of 1 to 35 the male rate was actually lower than the female. The results are shown in the census returns for the various countries. In England and Wales the males have lost their initial advantage by the time that the age of 15 has been reached; at the age of 40 the females show an excess of nearly 600,000. In Scotland the females only overtake the males after attaining their majority. In Ireland the female population only overtook the male in the sixties. In Holland it is in the thirties, in Sweden in the forties, as it is in Switzerland and in Germany. In Austria and in Hungary it is much the same as in our own country. These countries show without exception a higher initial plurality of male births with a lower ratio of male to female mortality than our own country, and this is equally true of Scotland and of Ireland as compared with England and Wales. In most of them also the death-rate is higher than in this country, and it may be urged that in these cases the lower male ratio of mortality is due rather to failure to preserve the female lives than to success in preserving the males. But this argument does not apply all round. In the Netherlands and in the Scandinavian Peninsula the death-rate is slightly lower than in England and Wales, while the age constitution of their populations before the war was not materially different from our own. They were in fact slightly older populations as a whole. Thus England and Wales had 72'45% of its total population under 40 years of age; Norway, 67'95; The Netherlands, 73'24; Sweden, 69'06. At ages over 60 England and Wales had 8'04%; Norway, 11'03; Netherlands, 8'98; and Sweden, 11'95. At ages under 5, where mortality is relatively very high (over 20% of total mortality) our country had the smallest proportion of its total population, only 10'70%, while Norway had 11'99; The Netherlands, 12'59; and Sweden, 11'21. It will thus be seen that the age constitution of these populations is less favourable than our own. Yet the ratio of male to female mortality in each of them is considerably lower. The extent of this difference will be appreciated when one considers that, had the deaths of males to females in our own country during the 30 years under review been on the same level as in the three countries in question, we should have saved approximately about half a million male lives. In that case the growth of the excess of females in our population during that period would have been so slight as to be negligible. The solution of the problem of the future balance of the sexes may possibly lie in this direction—the lowering of the male death-rate in Great Britain until it bears the same relation to the female rate that it does in the countries cited. What this would mean may be thus illustrated: In the triennium 1910-12 the number of males who died in each million annually was 14,730. If the deaths among males had been in the same ratio to the deaths among females as obtains in the three countries, Norway, Netherlands, and Sweden, the deaths per million males would have been 13,750, and we should have saved as nearly as possible 1,000 lives per million living and kept the sex balance. This, then, is our object, which should not prove unattainable.

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